

**FLIGHT AND GROUND INSTRUCTOR
KNOWLEDGE TEST GUIDE**

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U.S. Department of Transportation
Federal Aviation Administration

INTRODUCTION

FAA-G-8082-7A, Flight and Ground Instructor Knowledge Test Guide, offers information for preparing you to take one or all of the following knowledge tests. This document supersedes FAA-G-8082-7, dated 1999.

- ✍ Fundamentals of Instructing (FOI)
- ✍ Ground Instructor—Basic (BGI)
- ✍ Ground Instructor—Advanced (AGI)
- ✍ Flight Instructor—Airplane (FIA)
- ✍ Flight Instructor—Helicopter (FRH)
- ✍ Flight Instructor—Gyroplane (FRG)
- ✍ Flight Instructor—Glider (FIG)
- ✍ Flight Instructor—Airplane-Added Rating) (AFA)
- ✍ Flight Instructor—Helicopter-Added Rating) (HFA)
- ✍ Flight Instructor—Gyroplane -Added Rating (GFA)
- ✍ Flight Instructor—Glider -Added Rating (AFG)

Federal Aviation Administration (FAA) airman knowledge tests are a very effective instrument for aviation safety and regulation compliance. However, these tests can only sample the vast amount of knowledge every pilot needs to operate safely in the National Airspace System (NAS).

Comments regarding this guide should be sent to the Federal Aviation Administration, Airman Testing Standards Branch, AFS-630, Attn: ATP Certification Area Manager, P.O. Box 25082, Oklahoma City, OK 73125. Comments may also be e-mailed to AFS630Comments@faa.gov.

KNOWLEDGE TEST ELIGIBILITY REQUIREMENTS

There are certain regulatory training and endorsement requirements that you must satisfy prior to taking a flight instructor practical test. For specific information pertaining to certification, you should carefully review the appropriate sections of Title 14 of the Code of Federal Regulations (14 CFR) part 61.

You must pass the fundamentals of instructing knowledge test and a flight or ground instructor knowledge test specific to the instructor rating sought. You may take these tests on the same day, and you do not have to take them in any particular order.

When applying for any additional instructor rating, you are not required to take the fundamentals of instructing knowledge test again. Once you have acquired a flight instructor certificate, you are eligible to give ground instruction required for a pilot or instructor certificate or rating, based on the ratings on your flight instructor certificate. Because of this, it is not necessary to obtain a separate ground instructor certificate since you would already have these privileges.

ROLE OF THE INSTRUCTOR

All pilot training is directed toward developing safe and competent pilots. The more complete a student's understanding of theory and principles, the easier it will be for that student to become a safe and competent pilot. It has long been recognized that flight and ground instruction go hand in hand. Each complements the other, resulting in a training program that is both meaningful and comprehensive.

Generally, pilots learn by one of two methods. Some learn by memorization while others acquire knowledge and understanding of basic procedures and techniques and apply these to various piloting operations. The latter method of learning is, by far, more effective. Effective pilot training is based on the knowledge and understanding of principles, along with skills that are essential to flight safety.

The keystone of the present-day training concept is the flight instructor—a professional who should assume full responsibility for all phases of a student pilot’s flight and ground instruction. A flight instructor must first be fully qualified as a pilot. In addition, a successful instructor must meet qualifications far beyond those required for certification as a pilot. An instructor must have a thorough understanding of how learning occurs, and how to apply teaching methods that best foster learning. The most important factor is the instructor’s own attitude toward instruction that determines the effectiveness of the teaching method. By understanding the teaching and learning processes, instructors will be better qualified to produce pilots who are able to operate safely within the National Airspace System (NAS).

KNOWLEDGE AREAS ON THE TESTS

Flight and ground instructor knowledge tests are comprehensive because they must test your knowledge in many subject areas. These include all aeronautical knowledge areas required for a private and commercial pilot certificate, as well as those required for a flight or ground instructor certificate. When applying for any flight or ground instructor knowledge test, you should review the appropriate sections of 14 CFR part 61 for specific knowledge areas on each test.

Flight instructors should be knowledgeable of not only what to do and how to do it, but also why a maneuver is performed and what common errors result if the maneuver or procedure is not performed properly. Ground instructors should also be knowledgeable of all subjects; however, they would not be expected to understand evaluating pilot performance of maneuvers and analyzing common errors.

It is generally accepted that a pilot with much knowledge, but little skill, is not adequately equipped to fly an aircraft. Neither is the pilot who is skillful in the manipulative techniques of flying, but lacks aviation knowledge.

DESCRIPTIONS OF THE TESTS

If you are pursuing initial flight or ground instructor certification, you must successfully complete the fundamentals of instructing knowledge test. However, if you hold a current teacher’s certificate at the junior or senior high school level, or you are an instructor at a college or university, you can receive credit for this test. This test contains 50 questions, and you are allowed 1.5 hours to complete the test. The minimum passing score is 70 percent.

In addition, you must successfully complete a knowledge test appropriate to the desired rating. The following tests each contain 100 questions (except for Ground Instructor—Basic, which contains 80 questions), and you are allowed 2.5 hours to complete each test.

- ✍ Ground Instructor—Basic
- ✍ Ground Instructor—Advanced
- ✍ Flight Instructor—Airplane
- ✍ Flight Instructor—Helicopter
- ✍ Flight Instructor—Gyroplane
- ✍ Flight Instructor—Glider

If you desire to add a rating to your flight instructor certificate, you must successfully complete a knowledge test, if required, appropriate to the desired rating.

The following tests each contain 25 questions, and you are allowed 1 hour to complete each test.

- ✍ Flight Instructor—Airplane-Added Rating
- ✍ Flight Instructor—Helicopter -Added Rating
- ✍ Flight Instructor—Gyroplane -Added Rating
- ✍ Flight Instructor—Glider-Added Rating

All test results expire at the end of 24 months after the month in which the test was taken.

All test questions are the objective, multiple-choice type. Each question can be answered by the selection of a single response. Each test question is independent of other questions; therefore, a correct response to one does not depend upon, or influence, the correct response to another.

Communication between individuals through the use of words is a complicated process. In addition to being an exercise in the application and use of aeronautical knowledge, a test is also an exercise in communication. Since the tests involve written rather than spoken words, communication between the test writer and the person being tested may become a difficult matter if care is not exercised by both parties. Consequently, considerable effort is expended to write each question in a clear, precise manner. Make sure you carefully read the instructions given with each test, as well as the statements in each test item.

When taking a test, keep the following points in mind:

- ✍ Answer each question in accordance with the latest regulations and guidance publications.
- ✍ Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
- ✍ After formulating an answer, determine which choice corresponds with that answer. The answer chosen should completely resolve the problem.
- ✍ From the answers given, it may appear that there is more than one possible answer; however, there is only one answer that is correct and complete. The other answers are either incomplete, erroneous, or represent a common misconception.
- ✍ If a certain question is difficult for you, it is best to mark it for review and proceed to the next question. After you answer the less difficult questions, return to those which you marked for review and answer them. The review marking procedure will be explained to you prior to starting the test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to the maximum advantage.
- ✍ When solving a calculation problem, select the answer closest to your solution. The problem has been checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices.

PROCESS FOR TAKING A KNOWLEDGE TEST

The Federal Aviation Administration (FAA) has available hundreds of computer testing centers worldwide. These testing centers offer the full range of airman knowledge tests including military competence, instrument foreign pilot, and pilot examiner screening tests. A list of Computer Testing Designees (CTDs) and phone numbers are provided in the section titled, *Obtaining Training and Testing Publications and General Information*.

The first step in taking a knowledge test is the registration process. You may either call the central 1-800 numbers or simply use the walk-in basis. If you choose to use the 1-800 number to register, you will need to select a testing center, schedule a test date, and make financial arrangements for test payment. You may register for tests several weeks in advance, and you may cancel your appointment according to the CTD's cancellation policy. If you do not follow the CTD's cancellation policies, you could be subject to a cancellation fee.

The next step in taking a knowledge test is providing proper identification. Although no prior authorization is necessary, except in the case of failure, to take any flight or ground instructor knowledge test, proper identification is required. Testing center personnel will not begin the test until your identification is verified.

Before you take the actual test, you will have the option to take a sample test. The actual test is time limited; however, you should have sufficient time to complete and review your test.

Upon completion of the knowledge test, you will receive your Airman Knowledge Test Report, with the testing center's embossed seal, which reflects your score.

The Airman Knowledge Test Report lists the subject matter knowledge codes for questions answered incorrectly. The total number of subject matter knowledge codes shown on the Airman Knowledge Test Report is not necessarily an indication of the total number of questions answered incorrectly.

Appendixes 1 and 2 of Advisory Circular (AC) 60-25, Subject Matter Knowledge Codes for Airman Knowledge Testing contains the listings of reference materials and subject matter knowledge codes for airman knowledge testing. You should match the subject matter knowledge codes on your Airman Knowledge Test Report to the codes in AC 60-25 to review your areas of deficiency.

The listings of reference materials and subject matter knowledge codes have been prepared by the FAA to establish specific references for all knowledge standards. The listings contain reference materials to be used when preparing for all airman knowledge tests.

AC 60-25 can be downloaded from the Regulatory Support Division's (AFS-600) web site. Refer to the section titled, *Obtaining Training and Testing Publications and General Information* for instructions.

Your instructor must provide instruction on each of the knowledge areas listed on your Airman Knowledge Test Report and complete an endorsement of this instruction. You must present the Airman Knowledge Test Report to the examiner prior to taking the practical test. During the oral portion of the practical test, the examiner is required to evaluate the noted areas of deficiency.

Should you require a duplicate Airman Knowledge Test Report due to loss or destruction of the original, send a signed request accompanied by a check or money order for \$1 payable to the FAA. Your request should be sent to the Federal Aviation Administration, Airmen Certification Branch, AFS-760, P.O. Box 25082, Oklahoma City, OK 73125.

USE OF TEST AIDS AND MATERIALS

You may use aids, reference materials, and test materials within the guidelines listed below, if actual test questions or answers are not revealed. All models of aviation-oriented calculators may be used, including small electronic calculators that perform only arithmetic functions (add, subtract, multiply, and divide). Simple programmable memories, which allow addition to, subtraction from, or retrieval of one number from the memory, are permissible. Also, simple functions, such as square root and percent keys are permissible. The following guidelines apply:

1. You may use any reference materials provided with the test. In addition, you may use scales, straightedges, protractors, plotters, navigation computers, log sheets, holding pattern entry aids, and electronic or mechanical calculators that are directly related to the test.
2. Manufacturer's permanently inscribed instructions on the front and back of such aids, e.g., formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, weight and balance formulas, and air traffic control procedures are permissible.
3. Testing centers may provide a calculator to you and/or deny use of your personal calculator based on the following limitations:
 - a. Prior to, and upon completion of the test, while in the presence of the proctor, you must actuate the ON/OFF switch and perform any other function that ensures erasure of any data stored in memory circuits.
 - b. The use of electronic calculators incorporating permanent or continuous type memory circuits without erasure capability is prohibited. The proctor may refuse the use of your calculator when unable to determine the calculator's erasure capability.
 - c. Printouts of data must be surrendered at the completion of the test if the calculator incorporates this design feature.
 - d. The use of magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which pre-written programs or information related to the test can be stored and retrieved is prohibited.
 - e. You are not permitted to use any booklet or manual containing instructions related to use of test aids.
4. Dictionaries are not allowed in the testing area.
5. The proctor makes the final determination relating to test materials and personal possessions you may take into the testing area.

DYSLEXIC TESTING PROCEDURES

If you are a dyslexic applicant, you may request approval from the local Flight Standards District Office (FSDO) or International Field Office (IFO) to take an airman knowledge test using one of the three options listed in preferential order:

1. Option one. Use current testing facilities and procedures whenever possible.
2. Option two. You may use a Franklin Speaking Wordmaster® to facilitate the testing process. The Wordmaster® is a self-contained electronic thesaurus that audibly pronounces typed in words and presents them on a display screen. It has a built-in headphone jack for private listening. The headphone feature must be used during testing to avoid disturbing others.
3. Option three. If you do not choose to use the first or second option may request a proctor to assist in reading specific words or terms from the test questions and supplement material. In the interest of preventing compromise of the testing process, the proctor must be someone who is non-aviation oriented.

The proctor must provide reading assistance only, with no explanation of words or terms. When this option is requested, the FSDO or IFO inspector must contact AFS-630 for assistance in selecting the test site and proctor.

Prior to approval of any option, the FSDO or IFO inspector must advise you of the regulatory certification requirement of being able to read, write, speak, and understand the English language.

CHEATING OR OTHER UNAUTHORIZED CONDUCT

Computer testing centers must follow strict security procedures to avoid test compromise. These procedures are established by the FAA and are covered in FAA Order 8080.6, Conduct of Airman Knowledge Tests. The FAA has directed testing centers to terminate a test at any time a test proctor suspects a cheating incident has occurred. An FAA investigation will then be conducted. If the investigation determines that cheating or unauthorized conduct has occurred, then any airman certificate or rating that you hold may be revoked, and you will be prohibited for 1 year from applying for or taking any test for a certificate or rating under 14 CFR part 61.

VALIDITY OF AIRMAN KNOWLEDGE TEST REPORTS

Airman Knowledge Test Reports are valid within the 24-calendar month period preceding the month you complete the practical test. If the Airman Knowledge Test Report expires before completion of the practical test, you must retake the knowledge test.

RETESTING PROCEDURES

If you receive a grade lower than 70 percent and wish to retest, you must present the following to testing center personnel.

- ✍ failed Airman Knowledge Test Report; and
- ✍ a written endorsement from an authorized instructor certifying that additional instruction has been given, and the instructor finds you competent to pass the test.

If you decide to retake the test in anticipation of a better score, you may retake the test after 30 days from the date your last test was taken. The FAA will not allow you to retake a passed test before the 30-day period has lapsed. Prior to retesting, you must give your current Airman Test Knowledge Report to the test proctor. The last test taken will reflect the official score.

OBTAINING TRAINING AND TESTING PUBLICATIONS AND GENERAL INFORMATION

Most of the current Flight Standards Service airman training and testing publications can be obtained in electronic format from the Regulatory Support Division's (AFS-600) web site. AFS-600's Internet address is:

<http://afs600.faa.gov>

The training and testing publications and general information can be found on the Airman Testing Standards (AFS-630) portion of AFS-600's web site.

You will find the following links available on AFS-630's portion of the web site. (If a publication is not available in electronic format, there is a listing of the current publication along with instructions on how to obtain paper copies.)

- ✍ [Advisory Circulars](#)
- ✍ [Airman Knowledge Test Questions](#)
- ✍ [Airman Knowledge Testing Sites](#)
- ✍ [Airman Knowledge Testing Supplements](#)
- ✍ [Airman Knowledge Testing Information](#)
- ✍ [Other Testing Information](#)
- ✍ [Practical Test Standards](#)
- ✍ [Test Statistics](#)
- ✍ [Training Handbooks](#)
- ✍ [Subject Matter Knowledge Codes](#)

Advisory Circulars

The advisory circulars provide guidance and information on various subjects related to airman certification.

Airman Knowledge Test Items

The airman knowledge test items contain the airman knowledge question banks representative of questions for airman knowledge tests and the corresponding subject matter knowledge codes, indicating specific references from which questions are developed.

The sample questions that are published on the web site are organized by content category and represent the types of questions included in the actual test banks. Practicing these questions will help you become familiar with similar questions on the airman knowledge tests. The knowledge test is not designed to intimidate any prospective airman; it is designed to measure their understanding of the rules and regulations required to receive an FAA certificate.

The policy regarding public access to test questions is to continue publishing questions that affect special emphasis areas regarding safety, such as aeronautical decision making, airspace, aircraft performance, operations/airworthiness regulations, weather services and reports, etc. However, we do not publish all test questions. Many questions in the test banks are parallel in content area or format and publishing same types of questions would not help the applicant in determining areas to study. Examples would include questions involving a process or calculation, such as weight and balance or performance questions using the same chart. Our intent in not publishing every question in the airman test bank is to respond to the public demand for proper evaluation of prospective airmen. It is our duty to respond to these issues and provide valid and reliable tests to make certain that qualified applicants meet the FAA airman knowledge testing standards.

Airman Knowledge Testing Sites

The airman knowledge testing sites contains a current listing of computer testing designees and computer testing centers, and the registration telephone numbers required when registering for a test.

The following is a list of the computer testing designees authorized to give FAA airman knowledge tests. This list should be helpful in case you choose to register for a test or simply want more information. This information is current as of October 2003.

Computer Assisted Testing Service (CATS)

1801 Murchison Drive, Suite 288
Burlingame, CA 94010

Applicant inquiry and test registration:
1-800-947-4228

From outside the U.S. (650) 259-8550

LaserGrade Computer Testing

16821 S.E. McGillivray, Suite 201
Vancouver, WA 98683

Applicant inquiry and test registration:
1-800-211-2754

From outside the U.S. (360) 896-9111

Airman Knowledge Testing Supplements

The airman knowledge testing supplements contain the graphics, legends, and maps that are needed to successfully respond to certain knowledge test items. The supplements will be located at this web site as they become available in electronic format. There is a current listing of all available supplements (file name: supplements.pdf) and instructions on how to purchase.

Knowledge Test Guides

The knowledge test guides describe the knowledge testing policy and procedures for each certification area.

Other Computer Testing Information

Other computer testing information provides specific test information, such as test name, test code (three-digit test identifiers), number of questions, and the time (hours) allotted for each knowledge test. The test identifiers will assist you in selecting the proper test for the certification/rating being sought.

Practical Test Standards

The practical test standards outline the knowledge and skill requirements for each airman certificate and rating. The references listed in each task of the practical test standards indicate the specific publications used to develop the skill standards. The ability to issue immediate changes prior to publishing revised printed copies ensures the practical test standards are always accurate and usable. Current practical test standard books and a current listing of practical test standard changes are maintained on the web site under practical test standards.

Test Statistics

Test statistics for all airman knowledge tests are contained in a series of tables organized by year and subject area. Individual tables are provided for the following subject areas: test volume, pass rates, average test scores, countries, regions, and district offices.

Training Handbooks

The training handbooks are the basic information sources an airman applicant should refer to when preparing for the knowledge and practical tests for a specific certificate or rating. The handbooks will be located at this web site as they become available in electronic format.

A current listing of all available handbooks and instructions on how to purchase handbooks is maintained on the web site under training handbooks, file name: currenthandbooks.pdf.

Subject Matter Knowledge Codes

Advisory Circular (AC) 60-25, Reference Materials and Subject Matter Knowledge Codes for Airman Knowledge Testing.

Appendixes 1 and 2 of this advisory circular contain the listings of reference materials and subject matter knowledge codes for airman knowledge testing. Appendix 1 includes codes for pilots, instructors, flight engineers, dispatchers, navigators, pilot examiners, inspection authorization, and parachute riggers. Appendix 2 includes codes for aircraft mechanics.

The listings of reference materials and subject matter knowledge codes have been prepared by the Federal Aviation Administration (FAA) to establish specific references for all knowledge standards. The listings contain reference materials to be used when preparing for all airman knowledge tests. The subject matter knowledge codes should be referred to when reviewing areas of deficiency on airman knowledge test reports.